#### Mapping FRBR → CRM

Foreword to the 1st "edition" (before the Monterey meeting, February 2002):

The FRBR model (Functional Requirements for Bibliographic Records) was approved in 1997 by the Standing Committee of the IFLA Section on Cataloguing (International Federation of Library Associations and Institutions) and published in 1998.

Its aim was at the same time to demonstrate, on scientific bases, that full cataloguing, such as it has traditionally been in use in libraries, is justified and even necessary, and to convey some more experimental (not to say revolutionary) views on data structure: "the model could also be expanded in depth to create a fully developed data model that would serve as the basis for the design of an experimental database to assess the efficiency and effectiveness of a database structure patterned on the model" (FRBR final study, p. 6).

As its very name suggests, the FRBR model is designed for bibliographic records only, whereas libraries traditionally produce two kinds of records: bibliographic records for the description of the items they actually hold or give access to, and authority records for a better control of the access points to these bibliographic records (names of persons, names of corporate bodies, subject headings, in some cases titles of works, etc.). The FRANAR group (Functional Requirements And Numbering of Authority Records) within IFLA has as task to extend the modeling process to authority records. Tom Delsey has prepared a document for discussion within the FRANAR group; this working draft contains substantial enhancements to FRBR, since in the original version of FRBR authority records are taken into consideration only inasmuch as they are directly related to bibliographic records, and these enhancements might easily be mapped to CRM (for instance, "Place of Birth" and "Place of Death" for the Person entity). However, I only mapped FRBR in the form in which it currently stands and is available: I'll wait until Tom Delsey's proposals are approved by the FRANAR group and officially published before I map them to CRM.

Lately (on 2002 January 4th to be specific), Tom Delsey (again) proposed an extension of FRBR, in order "to reflect the data content of the MARC bibliographic and holding formats" and to clarify "the extent of the information contained in MARC records and the interrelationships between and among elements of that information." Though this extension has been made available to anyone (<a href="http://www.loc.gov/marc/marc-functional-analysis/appendixdpdf">http://www.loc.gov/marc/marc-functional-analysis/appendixdpdf</a>), I didn't

take it into account either, but it surely will be most useful in the future to map this extended version of FRBR to CRM.

One of the major problems I had to struggle with while working on this mapping, was how precisely to map the *manifestation* entity. I first proposed either E24 Physical man-made stuff or E22 Man-made object, but as a result of some discussion with Martin, perhaps E73 Information object (with due type, in order to make a clear distinction between *expression* and *manifestation*) would be more convenient; but then there would be some problems again with such attributes of the *manifestation* entity as "form of carrier", "extent of the carrier", "physical medium", "dimensions of the carrier", etc.

Another problem was the lack of an equivalent for the *concept* entity — or should it be a *type* in CRM?

There is no equivalent either for the notion of "edition / issue designation", which is crucial for bibliographic items. This designation might be interpreted as the identification of a state of an information object between two changes — but in most cases this state is still available even after the change has occurred.

A number of other, less important difficulties have been highlighted hereafter in yellow.

All of these problems, major or minor, deserve some discussion, in order to achieve an acceptable mapping of FRBR to CRM.

Foreword to the 2nd version (July 2002):

This mapping was revised on the basis of comments from the CRM-SIG on the occasion of its Monterey meeting in February 2002. These comments led to a change in the mapping of some fundamental entities in the FRBR model, resulting thus in radical changes in parts of the rest of the mapping.

Besides, instead of dividing this mapping into three chapters, "Entities", "Attributes", "Relationships", as formerly, I regarded both "attributes" and "relationships" as "properties", following the CRM terminology. The difference, in the FRBR model, between "attributes" and "relationships", is that an attribute is a property that, in bibliographic databases, always is expressed through a mere statement in the record, a string (which matches in CRM the "has note: E62 String" property), whereas relationships should always correspond to actual links from records (typically, bibliographic) to distinct records (typically, those found in authority files). (This is the reason why FRBR regards "4.4.4. Place of Publication/Distribution" as an attribute, though the Place entity does exist in the model but corresponds to an authority record that is used only for a subject relationship).

I did not use the mapping utility developed by ICS-FORTH, because my computer did not support it. It remains therefore a mere Word document. I hope however it will be possible in a near future (once it has been accepted by the CRM-SIG) to transform it into a more convenient format, which will allow it to be exploited.

Changes between the previous version and this one are highlighted in grey. Problems and unanswered questions are highlighted in vellow.

Foreword to the 3rd version (December 2002):

In November 2002 version 3.4 of CRM was made available. This is a highly stabilized version of the model that takes all changes from the 5th joined meeting of the CIDOC-SIG and ISO/TC46/SC4/WG9 into account. The 2nd edition of the FRBR-to-CRM mapping was checked on this stabilized version and some minor further changes were made, in order to result in the present edition, dated 26 December 2002.

In the meanwhile, the FRANAR model has made considerable progress and tends more and more to be a generalized overall entity-relationship model for the "bibliographic universe". This model is however not publicly available yet. The third edition of the FRBR-to-CRM mapping is therefore still limited to FRBR such as it was approved by IFLA on September 5, 1997.

Changes between the second edition of the mapping and the third one are highlighted in blue.

#### Entities (and Groups of Entities):

| Source: FRBR   | CRM  |
|--|--|
|  |  |
| 3.1.1. Group 1 (Work, Expression, E71 Man-made Stuff |  |
| Manifestation, Item)                                 |  |
| 3.1.2. Group 2 (Person, Corporate                    | E39 Actor  |
| Body)  |  |
| 3.1.3. Group 3 (Group 1, Group 2,                    | E1 CRM Entity  |
| Concept, Object, Event, Place)                       |  |
| 3.2.1. Work  | No equivalent as an entity. The FRBR notion of "Work" is actually reflected in CRM as a property: P130.F shows               |
|  | features of (features are also found on) P130.1 kind of similarity: "Different version" (both Domain and Range being:        |
|  | E73 Information Object (type: "Expression"))   |
|  | However, for practical reasons, FRBRWork is also mapped to CRME73 Information Object (has type: "Work"), which               |
|  | allows for a mapping of Work attributes and relationships to CRM entities and properties.                                    |
| 3.2.2. Expression                                    | E73 Information Object P2.F has type E55 Type (with value: "Expression")   |
|  | (In the case of texts, may be specialized into: E33 Linguistic object)   |
|  | (In the case of images, may be specialized into: E38 Image)  |
| 3.2.3. Manifestation                                 | E73 Information object P2.F has type E55 Type (with value: "Manifestation")  |
|  | E55 Type   |
| 3.2.4. Item  | E84 Information Carrier  |
| 3.2.5. Person  | E21 Person   |
| 3.2.6. Corporate Body                                | E74 Group  |
| -  | In some cases: E40 Legal body  |
|  | Note: the FRBR entity "Corporate Body" also involves "meetings, conferences, congresses, expeditions, exhibitions,           |
|  | festivals, fairs, etc." and "organizations that act as territorial authorities [] such as a federation, a state, a region, a |
|  | local municipality, etc."  |
| 3.2.7. Concept                                       | E28 Conceptual Object  |
| 3.2.8. Object  | E19 Physical Object  |
| 3.2.9. Event   | E4 Period <sup>1</sup>   |
| 3.2.10. Place  | E53 Place  |

<sup>1</sup> The definition and examples show that the FRBR concept of "event" comprehends at the same time the CRM classes E4 Period and E5 Event. Since E5 Event is a subclass of E4 Period, it should not be problematic to map FRBR 3.2.9 Event to CRM E4 Period.

#### Properties:

|            | Source: FRBR  | CRM   |
|------------|---|---|
| Domain     | 3.2.1. Work   | E73 Information object (has type: "Work")                             |
| Link       | has attribute: 4.2.1. Title of the Work                   | P102.F has title (is title of)  |
| Range      | 4.2.1. Title of the Work                                  | E35 Title   |
| Conditions |   |   |
|            |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.1. Work   | E73 Information object (has type: "Work")                             |
| Link       | has attribute: 4.2.2. Form of Work                        | P2.F has type (is type of) E55 Type                                   |
| Range      | 4.2.2. Form of Work                                       | E55 Type  |
| Conditions |   | with definition of a subset "Form of Work" within E55 Type            |
|            |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.1. Work   | E73 Information object (has type: "Work")                             |
| Link       | has attribute: 4.2.3. Date of the Work                    | P94.B was created by (has created) E65 Creation Event                 |
|            |   | E65 Creation Event P4.F has time-span (is time-span of) E52 Time-     |
|            |   | span  |
|            |   | E52 Time-span P78.F is identified by (identifies) E50 Date            |
| Range      | 4.2.3. Date of the Work                                   | E50 Date  |
| Conditions |   |   |
|            |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.1. Work   | E73 Information object (has type: "Work")                             |
| Link       | has attribute: 4.2.4. Other Distinguishing Characteristic | P102.F has title (is title of) E35 Title                              |
|            |   | E35 Title P106.F is composed of (forms part of) E33 Linguistic Object |
|            |   | E33 Linguistic Object P2.F has type (is type of) E55 Type (value:     |
|            |   | "Other Distinguishing Characteristic")                                |
| Range      | 4.2.4. Other Distinguishing Characteristic                | E33 Linguistic Object   |
| Conditions |   | Actually is a part of E35 Title, not as a "natural title" but as an   |
|            |   | additional information provided by catalogers in order to distinguish |
|            |   | between two homonymous titles.  |

|            | Source: FRBR   | CRM  |
|------------|--|--|
| Domain     | 3.2.1. Work  | E73 Information object (has type: "Work")                            |
| Link       | has attribute: 4.2.5. Intended Termination                 | P2.F has type (is type of) E55 Type                                  |
| Range      | 4.2.5. Intended Termination                                | E55 Type   |
| Conditions |  | with definition of a subset "Intended Termination" within E55 Type   |
|            |  |  |
|            | Source: FRBR   | CRM  |
| Domain     | 3.2.1. Work  | E73 Information object (has type: "Work")                            |
| Link       | has attribute: 4.2.6. Intended Audience                    | P103.F was intended for (was intention of) E55 Type                  |
| Range      | 4.2.6. Intended Audience                                   | E55 Type   |
| Conditions |  | with definition of a subset "Intended Audience" within E55 Type      |
|            |  |  |
|            | Source: FRBR   | CRM  |
| Domain     | 3.2.1. Work  | E73 Information object (has type: "Work")                            |
| Link       | has attribute: 4.2.7. Context for the Work                 | P94.B was created by (has created) E65 Creation Event                |
|            |  | E65 Creation Event P10.F falls within (contains) E4 Period           |
| Range      | 4.2.7. Context for the Work                                | E4 Period  |
| Conditions |  |  |
|            |  |  |
|            | Source: FRBR   | CRM  |
| Domain     | 3.2.1. Work  | E73 Information object (has type: "Work") (has type: "Musical Work") |
| Link       | has attribute: 4.2.8. Medium of Performance (Musical Work) | P103.F was intended for (was intention of) E55 Type                  |
| Range      | 4.2.8. Medium of Performance (Musical Work)                | E55 Type   |
| Conditions | , i  | with definition of a subset "Medium of Performance" within E55       |
|            |  | Type   |
|            |  |  |
|            | Source: FRBR   | CRM  |
| Domain     | 3.2.1. Work  | E73 Information object (has type: "Work") (has type: "Musical Work") |
| Link       | has attribute: 4.2.9. Numeric Designation (Musical Work)   | P1.F is identified by (identifies) E75 Conceptual object appellation |
|            |  | E75 Conceptual object appellation P2.F has type E55 Type: "Numeric   |
| D          | (100 N   | Designation (Musical Work)"  |
| Range      | 4.2.9. Numeric Designation (Musical Work)                  | E75 Conceptual object appellation                                    |
| Conditions |  |  |

|            | Source: FRBR   | CRM   |
|------------|--|---|
| Domain     | 3.2.1. Work  | E73 Information object (has type: "Work") (has type: "Musical       |
|            |  | Work")  |
| Link       | has attribute: 4.2.10. Key (Musical Work)              | P2.F has type (is type of) E55 Type                                 |
| Range      | 4.2.10. Key (Musical Work)                             | E55 Type  |
| Conditions |  | with definition of a subset "Key (music)" within E55 Type           |
|            |  |   |
|            | Source: FRBR   | CRM   |
| Domain     | 3.2.1. Work  | E73 Information object (has type: "Work") (has type: "Cartographic  |
|            |  | Work")  |
| Link       | has attribute: 4.2.11. Coordinates (Cartographic Work) | P67.F refers to (is referred to by) E27 Site                        |
|            |  | E27 Site P1.F is identified by (identifies) E47 Spatial coordinates |
| Range      | 4.2.11. Coordinates (Cartographic Work)                | E47 Spatial coordinates   |
| Conditions |  |   |
|            |  |   |
|            | Source: FRBR   | CRM   |
| Domain     | 3.2.1. Work  | E73 Information object (has type: "Work") (has type: "Cartographic  |
|            |  | Work")  |
| Link       | has attribute: 4.2.12. Equinox (Cartographic work)     | P67.F refers to (is referred to by) E50 Date                        |
|            |  | P67.1.F has type: E55 Type "Equinox"                                |
| Range      | 4.2.12. Equinox (Cartographic work)                    | E50 Date  |
| Conditions |  |   |
|            |  |   |
|            | Source: FRBR   | CRM   |
| Domain     | 3.2.2. Expression                                      | E73 Information object (has type: "Expression")                     |
| Link       | has attribute: 4.3.1. Title of the Expression          | P102.F has title (is title of) E35 Title                            |
| Range      | 4.3.1. Title of the Expression                         | E35 Title   |
| Conditions |  |   |
|            |  |   |
|            | Source: FRBR   | CRM   |
| Domain     | 3.2.2. Expression                                      | E73 Information object (has type: "Expression")                     |
| Link       | has attribute: 4.3.2. Form of Expression               | P2.F has type (is type of) E55 Type                                 |
| Range      | 4.3.2. Form of Expression                              | E55 Type  |
| Conditions |  | with definition of a subset "Form of Expression" within E55 Type    |

|                     | Source: FRBR  | CRM   |
|---------------------|---|---|
| Domain              | 3.2.2. Expression   | E73 Information object (has type: "Expression")   |
| Link                | has attribute: 4.3.3. Date of Expression                  | P94.B was created by (has created) E65 Creation Event   |
|                     |   | E65 Creation Event P4.F has time-span (is time-span of) E52 Time-   |
|                     |   | span  |
|                     |   | E52 Time-span P78.F is identified by (identifies) E50 Date  |
| Range               | 4.3.3. Date of Expression                                 | E50 Date  |
| Conditions          |   |   |
|                     | C EDDD  | CDM   |
| Б.                  | Source: FRBR  | CRM   |
| Domain              | 3.2.2. Expression   | E33 Linguistic object   |
| Link                | has attribute: 4.3.4. Language of Expression              | P72.F has language (is language of) E56 Language  |
| Range               | 4.3.4. Language of Expression                             | E56 Language  |
| Conditions          |   |   |
|                     | Source: FRBR  | CDM   |
| Б .                 |   | CRM   |
| Domain              | 3.2.2. Expression   | E73 Information object (has type: "Expression")   |
| Link                | has attribute: 4.3.5. Other Distinguishing Characteristic | P102.F has title (is title of) E35 Title  |
|                     |   | E35 Title P106.F is composed of (forms part of) E33 Linguistic Object   |
|                     |   | E33 Linguistic Object P2.F has type (is type of) E55 Type (value: "Other Distinguishing Characteristic")                                  |
| Damas               | 42 E Other Dietin swiching Change tonictic                |   |
| Range<br>Conditions | 4.3.5. Other Distinguishing Characteristic                | E33 Linguistic Object   |
| Conditions          |   | Actually is a part of E35 Title, not as a "natural title" but as an additional information provided by catalogers in order to distinguish |
|                     |   | between two homonymous titles.  |
|                     |   | between two nomonymous titles.  |
|                     | Source: FRBR  | CRM   |
| Domain              | 3.2.2. Expression   | E73 Information object (has type: "Expression")   |
| Link                | has attribute: 4.3.6. Extensibility of Expression         | P3.F has note E62 String  |
|                     | 7 1   | P3.1.F has type: E55 Type "Extensibility of expression"   |
| Range               | 4.3.6. Extensibility of Expression                        | E62 String  |
| Conditions          |   |   |
|                     |   |   |
|                     | Source: FRBR  | CRM   |

| Domain     | 3.2.2. Expression  | E73 Information object (has type: "Expression")            |
|------------|--|--|
| Link       | has attribute: 4.3.7. Revisability of Expression           | P3.F has note E62 String                                   |
|            | v -  | P3.1.F has type: E55 Type "Revisability of expression"     |
| Range      | 4.3.7. Revisability of Expression                          | E62 String   |
| Conditions | •  |  |
|            | •  | ·  |
|            | Source: FRBR   | CRM  |
| Domain     | 3.2.2. Expression  | E73 Information object (has type: "Expression")            |
| Link       | has attribute: 4.3.8. Extent of the Expression             | P43.F has dimension (is dimension of) E54 Dimension        |
| Range      | 4.3.8. Extent of the Expression                            | E54 Dimension  |
| Conditions |  |  |
|            |  | •  |
|            | Source: FRBR   | CRM  |
| Domain     | 3.2.2. Expression  | E73 Information object (has type: "Expression")            |
| Link       | has attribute: 4.3.9. Summarization of Content             | P3.F has note E62 String                                   |
|            |  | P3.1.F has type: E55 Type "Summarization of content"       |
| Range      | 4.3.9. Summarization of Content                            | E62 String   |
| Conditions |  |  |
|            |  |  |
|            | Source: FRBR   | CRM  |
| Domain     | 3.2.2. Expression  | E73 Information object (has type: "Expression")            |
| Link       | has attribute: 4.3.10. Context for the Expression          | P94.B was created by (has created) E65 Creation Event      |
|            |  | E65 Creation Event P10.F falls within (contains) E4 Period |
| Range      | 4.3.10. Context for the Expression                         | E4 Period  |
| Conditions |  |  |
|            |  |  |
|            | Source: FRBR   | CRM  |
| Domain     | 3.2.2. Expression  | E73 Information object (has type: "Expression")            |
| Link       | has attribute: 4.3.11. Critical Response to the Expression | P3.F has note E62 String                                   |
|            |  | P3.1.F has type: E55 Type "Critical response"              |
| Range      | 4.3.11. Critical Response to the Expression                | E62 String   |
| Conditions |  |  |
|            |  |  |
|            | Source: FRBR   | CRM  |
| Domain     | 3.2.2. Expression  | E73 Information object (has type: "Expression")            |

| Link       | has attribute: 4.3.12. Use Restrictions on the Expression    | P104.F is subject to (applies to) E30 Right                                    |
|------------|--|--|
| Range      | 4.3.12. Use Restrictions on the Expression                   | E30 Right  |
| Conditions |  |  |
|            |  |  |
|            | Source: FRBR   | CRM  |
| Domain     | 3.2.2. Expression  | E73 Information object (has type: "Expression") (has type: "Serial")           |
| Link       | has attribute: 4.3.13. Sequencing Pattern (Serial)           | P3.F has note E62 String   |
|            |  | P3.1.F has type: E55 Type "Sequencing pattern"                                 |
| Range      | 4.3.13. Sequencing Pattern (Serial)                          | E62 String   |
| Conditions |  |  |
|            |  | T  |
|            | Source: FRBR   | CRM  |
| Domain     | 3.2.2. Expression  | E73 Information object (has type: "Expression") (has type: "Serial")           |
| Link       | has attribute: 4.3.14. Expected Regularity of Issue (Serial) | P2.F has type (is type of) E55 Type  |
| Range      | 4.3.14. Expected Regularity of Issue (Serial)                | E55 Type   |
| Conditions |  | with definition of a subset "Expected Regularity of Issue" within E55          |
|            |  | Type   |
|            |  | with two possible values only for E55 Type in that case: "regular" or          |
|            |  | "irregular"  |
|            | C EDDD   | CD1.6  |
| ъ .        | Source: FRBR   | CRM  |
| Domain     | 3.2.2. Expression  | E73 Information object (has type: "Expression") (has type: "Serial")           |
| Link       | has attribute: 4.3.15. Expected Frequency of Issue (Serial)  | P2.F has type (is type of) E55 Type  |
| Range      | 4.3.15. Expected Frequency of Issue (Serial)                 | E55 Type   |
| Conditions |  | with definition of a subset "Expected Frequency of Issue" within E55           |
|            |  | Туре   |
|            |  | with a limited range of possible values for E55 Type in that case:             |
|            |  | "weekly", "monthly", "quarterly", "annually"                                   |
|            | Source: FRBR   | CRM  |
| Damain     |  |  |
| Domain     | 3.2.2. Expression  | E73 Information object (has type: "Expression") (has type: "Musical Notation") |
| Link       | has attailured 4.2.16 Trums of Casus (Musical Notation)      |  |
|            | has attribute: 4.3.16. Type of Score (Musical Notation)      | P2.F has type (is type of) E55 Type  |
| Range      | 4.3.16. Type of Score (Musical Notation)                     | E55 Type   |
| Conditions |  | with definition of a subset "Type of Score" within E55 Type                    |

|            |   | with a limited range of possible values for E55 Type in that case: "short score", "full score", "condensed score", "close score"  |
|------------|---|---|
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.2. Expression   | E73 Information object (has type: "Expression") (has type: "Musical Notation")  |
| Link       | has attribute: 4.3.17. Medium of Performance (Musical Notation or Recorded Sound)                               | P103.F was intended for (was intention of) E55 Type   |
| Range      | 4.3.17. Medium of Performance (Musical Notation or Recorded Sound)  | E55 Type  |
| Conditions | IF the instance of 3.2.2. Expression has attribute: 4.3.2. Form of Expression, value: "Musical Notation", THEN: | with definition of a subset "Medium of Performance" within E55 Type   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.2. Expression   | E73 Information object (has type: "Expression") (has type: "Recorded Sound")  |
| Link       | has attribute: 4.3.17. Medium of Performance (Musical Notation or Recorded Sound)                               | P94.B was created by (has created) E65 Creation Event<br>E65 Creation Event P125.F used general object (was used for) E55<br>Type |
| Range      | 4.3.17. Medium of Performance (Musical Notation or Recorded Sound)  |   |
| Conditions | IF the instance of 3.2.2. Expression has attribute: 4.3.2. Form of Expression, value: "Recorded Sound", THEN:   | with definition of a subset "Medium of Performance" within E55<br>Type  |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.2. Expression   | E73 Information object (has type: "Expression") (has type: "Cartographic Image/Object")   |
| Link       | has attribute: 4.3.18. Scale (Cartographic Image/Object)  | P3.F has note E62 String P3.1.F has type: E55 Type "Scale"  |
| Range      | 4.3.18. Scale (Cartographic Image/Object)   | E62 String  |
| Conditions |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.2. Expression   | E73 Information object (has type: "Expression") (has type: "Cartographic Image/Object")   |

| Link       | has attribute: 4.3.19. Projection (Cartographic Image/Object)   | P2.F has type (is type of) E55 Type                                |
|------------|---|--|
| Range      | 4.3.19. Projection (Cartographic Image/Object)                  | E55 Type   |
| Conditions |   | with definition of a subset "Projection" within E55 Type           |
|            |   | with a limited range of possible values for E55 Type in that case: |
|            |   | "transverse Mercator", "azimuthal equidistant"                     |
|            |   |  |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.2. Expression   | E73 Information object (has type: "Expression") (has type:         |
|            |   | "Cartographic Image/Object")                                       |
| Link       | has attribute: 4.3.20. Presentation Technique (Cartographic     | P2.F has type (is type of) E55 Type                                |
|            | Image/Object)   |  |
| Range      | 4.3.20. Presentation Technique (Cartographic Image/Object)      | E55 Type   |
| Conditions |   | with definition of a subset "Presentation Technique" within E55    |
|            |   | Туре   |
|            |   | with a limited range of possible values for E55 Type in that case: |
|            |   | "anaglyphic", "diagrammatic", "pictorial"                          |
|            |   |  |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.2. Expression   | E73 Information object (has type: "Expression") (has type:         |
|            |   | "Cartographic Image/Object")                                       |
| Link       | \                         | P2.F has type (is type of) E55 Type                                |
|            | Image/Object)   |  |
| Range      | 4.3.21. Representation of Relief (Cartographic Image/Object)    | E55 Type   |
| Conditions |   | with definition of a subset "Representation of Relief" within E55  |
|            |   | Туре   |
|            |   | with a limited range of possible values for E55 Type in that case: |
|            |   | "contours", "shading", "hachures", "spot heights", "bathymetric    |
|            |   | hints"   |
|            |   |  |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.2. Expression   | E73 Information object (has type: "Expression") (has type:         |
|            |   | "Cartographic Image/Object")                                       |
| Link       | has attribute: 4.3.22. Geodetic, Grid, and Vertical Measurement | P2.F has type (is type of) E55 Type                                |
|            | (Cartographic Image/Object)                                     |  |
| Range      | 4.3.22. Geodetic, Grid, and Vertical Measurement (Cartographic  | E55 Type   |

|            | Image/Object)   |   |
|------------|---|---|
| Conditions |   | with definition of a subset "Geodetic, Grid, and Vertical                               |
|            |   | Measurement" within E55 Type  |
|            |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.2. Expression   | E73 Information object (has type: "Expression") (has type:                              |
|            |   | "Cartographic Image/Object")  |
| Link       | has attribute: 4.3.23. Recording Technique (Remote Sensing Image)   | P2.F has type (is type of) E55 Type   |
| Range      | 4.3.23. Recording Technique (Remote Sensing Image)                  | E55 Type  |
| Conditions |   | with definition of a subset "Recording Technique" within E55 Type                       |
|            |   | with a limited range of possible values for E55 Type in that case:                      |
|            |   | "multispectral photography", "infrared line scanning", "SLAR",                          |
|            |   | "passive microwave mapping"   |
|            |   |   |
| Γ          | Source: FRBR  | CRM   |
| Domain     | 3.2.2. Expression   | E73 Information object (has type: "Expression") (has type:                              |
| - · ·      |   | "Cartographic Image/Object")  |
| Link       | has attribute: 4.3.24 Special Characteristic (Remote Sensing Image) | P2.F has type (is type of) E55 Type   |
| Range      | 4.3.24 Special Characteristic (Remote Sensing Image)                | E55 Type  |
| Conditions |   | with definition of a subset "Special Characteristic" within E55 Type                    |
|            | Source: FRBR  | CRM   |
| Domain     |   |   |
| Domain     | 3.2.2. Expression   | E73 Information object (has type: "Expression") (has type: "Cartographic Image/Object") |
| Link       | has attribute: 4.3.25. Technique (Graphic or Projected Image)       | P2.F has type (is type of) E55 Type   |
| Range      | 4.3.25. Technique (Graphic of Projected Image)                      | E55 Type  |
| Conditions | 4.5.25. Technique (Graphic of Trojected Image)                      | with definition of a subset "Technique (Graphic or Projected Image)"                    |
| Conditions |   | within E55 Type   |
|            |   | within E55 Type with a limited range of possible values for E55 Type in that case:      |
|            |   | "animation", "live action", "computer generation", "3D"                                 |
| L          |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.3. Manifestation  | E73 Information object (has type: "Manifestation")                                      |
| Link       | has attribute: 4.4.1. Title of the Manifestation                    | P102.F has title (is title of) E35 Title  |
|            |   | P102.1.F has type: E55 Type   |

| Range      | 4.4.1. Title of the Manifestation                         | E35 Title  |
|------------|---|--|
| Conditions |   | with definition of a subset "Title of the Manifestation" within E55        |
|            |   | Type, with a limited range of possible values within this subset,          |
|            |   | including: "title on the title page", "title on the title frame", "cover   |
|            |   | title", "added title-page title", "caption title", "running title", "spine |
|            |   | title", "title in a colophon", "title in an explicit", "title on a         |
|            |   | container", "title on a microfiche header", "key title", "expanded         |
|            |   | title", "translated title", "supplied title"                               |
|            |   |  |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.3. Manifestation                                      | E55 Type (has type: "Manifestation")                                       |
| Link       | has attribute: 4.4.2. Statement of responsibility         | P137.F is exemplified by (exemplifies) E84 Information Carrier             |
|            |   | E84 Information Carrier P65.F shows visual item (is shown by) E34          |
|            |   | Inscription  |
|            |   | E34 Inscription P67.F refers to (is referred to by) E39 Actor              |
|            |   | P67.1.F has type: E55 Type "Statement of responsibility"                   |
| Range      | 4.4.2. Statement of responsibility                        | E34 Inscription  |
| Conditions |   | <i>Note:</i> this is a mere transcription of the statement ("inscription") |
|            |   | found on a document. The actual relationship between a document            |
|            |   | and an author is modeled under 5.2.2.                                      |
|            | C PADA  | l cm t   |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.3. Manifestation                                      | E55 Type (has type: "Manifestation")                                       |
| Link       | has attribute: 4.4.3. Edition/Issue Designation           | P137.F is exemplified by (exemplifies) E84 Information Carrier             |
|            |   | E84 Information Carrier P65.F shows visual item (is shown by) E34          |
|            |   | Inscription  |
|            |   | E34 Inscription P2.F has type E55 Type (with value: "Edition/issue         |
|            |   | designation")  |
| Range      | 4.4.3. Edition/Issue Designation                          | E34 Inscription  |
| Conditions |   |  |
|            |   | l any s  |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.3. Manifestation                                      | E55 Type (has type: "Manifestation")                                       |
| Link       | has attribute: 4.4.4. Place of Publication / Distribution | P137.F is exemplified by (exemplifies) E84 Information Carrier             |
|            |   | E84 Information Carrier P65.F shows visual item (is shown by) E34          |

|            |  | Inscription   |
|------------|--|---|
|            |  | E34 Inscription P2.F has type E55 Type (with value: "Place of                     |
|            |  | Publication / Distribution")  |
| Range      | 4.4.4. Place of Publication / Distribution | E34 Inscription   |
| Conditions |  | Besides,  |
|            |  | E34 Inscription P67.F refers to (is referred to by) E48 Place name                |
|            |  | E48 Place name P87.B identifies (is identified by) E53 Place                      |
|            |  | E53 Place P7.B witnessed (took place at) E12 Production Event                     |
|            |  | E12 Production Event P108.F has produced (was produced by) E84                    |
|            |  | Information Carrier   |
|            |  | Note: this is a mere transcription of the statement found on a                    |
|            |  | document. Conceptually, it is possible to model the actual                        |
|            |  | relationship between a document and the place where it was                        |
|            |  | published, but the authors of the FRBR study chose not to do so,                  |
|            |  | because there usually are no authority files for or normalized access             |
|            |  | points to places of publication/distribution in library catalogues <sup>2</sup> . |

|            | Source: FRBR                                | CRM   |
|------------|---|---|
| Domain     | 3.2.3. Manifestation                        | E55 Type (has type: "Manifestation")                              |
| Link       | has attribute: 4.4.5. Publisher/Distributor | P137.F is exemplified by (exemplifies) E84 Information Carrier    |
|            |   | E84 Information Carrier P65.F shows visual item (is shown by) E34 |
|            |   | Inscription   |
|            |   | E34 Inscription P2.F has type E55 Type (with value:               |
|            |   | "Publisher/Distributor")  |
| Range      | 4.4.5. Publisher/Distributor                | E34 Inscription   |
| Conditions |   | Besides,  |

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<sup>&</sup>lt;sup>2</sup> FRBR final report, p. 31: "The model does not [...] parallel entity relationships with attributes in all cases where such parallels could be drawn. For example, 'place of publication/distribution' is defined as an attribute of the manifestation to reflect the statement appearing in the manifestation itself that indicates where it was published. Inasmuch as the model also defines place as an entity it would have been possible to define an additional relationship linking the entity place either directly to the manifestation or indirectly through the entities person and corporate body which in turn are linked through the production relationship to the manifestation. To produce a fully developed data model further definition of that kind would be appropriate [the italics are mine!]. But for the purposes of this study it was deemed unnecessary to have the conceptual model reflect all such possibilities. In cases such as the place of publication example it was considered sufficient simply to define an attribute to reflect labeling information as such without taking the analysis further to delineate a parallel entity relationship. Parallel delineation was done only in cases where it seemed warranted by the need to provide for controlled or normalized access [the italics are mine again!] to the information reflected in the attribute."

|            |  | E34 Inscription P67.F refers to (is referred to by) E82 Actor Appellation          |
|------------|--|--|
|            |  | E82 Actor Appellation P131.B identifies (is identified by) E39 Actor               |
|            |  | E39 Actor P11.B participated in (had participant) E12 Production                   |
|            |  | Event  |
|            |  | E12 Production Event P108.F has produced (was produced by) E84 Information Carrier |
|            |  | Note: this is a mere transcription of the statement found on a                     |
|            |  | document. The actual relationship between a document and a                         |
|            |  | publisher/distributor is modeled below, under 5.2.2.[3].                           |
|            | Source: FRBR   | CRM  |
| Domain     | 3.2.3. Manifestation                                     | E55 Type (has type: "Manifestation")   |
| Link       | has attribute: 4.4.6. Date of Publication/Distribution   | P137.F is exemplified by (exemplifies) E84 Information Carrier                     |
| LIIIK      | has attribute. 4.4.0. Date of 1 ublication/ Distribution | E84 Information Carrier P108.B was produced by (has produced) E12                  |
|            |  | Production Event   |
|            |  | E12 Production Event P4.F has time-span (is time-span of) E52 Time-                |
|            |  | span   |
|            |  | E52 Time-span P78.F identifies (is identified by) E50 Date                         |
| Range      | 4.4.6. Date of Publication/Distribution                  | E50 Date   |
| Conditions |  | Note: the FRBR model does not distinguish between the Date-as-                     |
|            |  | Inscription (i.e., the mere statement of date as given on a document)              |
|            |  | and the Date-as-Time-Primitive, though in current practice in a                    |
|            |  | computerized environment catalogers actually make this distinction.                |
|            | I  |  |
|            | Source: FRBR   | CRM  |
| Domain     | 3.2.3. Manifestation                                     | E55 Type (has type: "Manifestation")   |
| Link       | has attribute: 4.4.7. Fabricator/Manufacturer            | P137.F is exemplified by (exemplifies) E84 Information Carrier                     |
|            |  | E84 Information Carrier P65.F shows visual item (is shown by) E34                  |
|            |  | Inscription  |
|            |  | E34 Inscription P2.F has type E55 Type (with value:                                |
| D          | 445511111111111111111111111111111111111                  | "Fabricator/Manufacturer")   |
| Range      | 4.4.7. Fabricator/Manufacturer                           | E34 Inscription  |
| Conditions |  | Besides,   |
|            |  | E34 Inscription P67.F refers to (is referred to by) E82 Actor                      |

|            |                                       | Appellation E82 Actor Appellation P131.B identifies (is identified by) E39 Actor E39 Actor P11.B participated in (had participant) E12 Production Event E12 Production Event P108.F has produced (was produced by) E84 Information Carrier Note: this is a mere transcription of the statement found on a document. The actual relationship between a document and a fabricator/manufacturer is modeled below, under 5.2.2.[3]. |
|------------|---------------------------------------|---|
|            | C EDDD                                | CDM   |
| - ·        | Source: FRBR                          | CRM   |
| Domain     | 3.2.3. Manifestation                  | E55 Type (has type: "Manifestation")  |
| Link       | has attribute: 4.4.8 Series Statement | P137.F is exemplified by (exemplifies) E84 Information Carrier  |
|            |                                       | E84 Information Carrier P65.F shows visual item (is shown by) E34   |
|            |                                       | Inscription   |
|            |                                       | E34 Inscription P2.F has type E55 Type (with value: "Series   |
|            |                                       | statement")   |
| Range      | 4.4.8 Series Statement                | E34 Inscription   |
| Conditions |                                       | Note: this is a mere transcription of the statement found on a  |
|            |                                       | document. The actual relationship between a document and a series   |
|            |                                       | is [in my opinion, wrongly³] modeled below, under 5.3.1.1.  |
|            |                                       |   |
| <b>r</b>   | Source: FRBR                          | CRM   |
| Domain     | 3.2.3. Manifestation                  | E55 Type (has type: Manifestation)  |
| Link       | has attribute: 4.4.9. Form of Carrier | P137.F is exemplified by (exemplifies) E84 Information Carrier  |
|            |                                       | E84 Information Carrier P2.F has type E55 Type  |
| Range      | 4.4.9. Form of Carrier                | E55 Type (has type: Form of Carrier)  |
| Conditions |                                       | with definition of a subset "Form of Carrier" within E55 Type   |
|            |                                       | with a limited range of possible values for E55 Type in that case:  |
|            |                                       | "sound cassette", "videodisc", "microfilm cartridge",   |
|            |                                       | "transparency"  |

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<sup>&</sup>lt;sup>3</sup> It should have been modeled, I think, under 5.3.4.1: "Whole/Part Manifestation-to-Manifestation Relationships", instead of 5.3.1.1: "Whole/Part Work-to-Work Relationships".

|            | Source: FRBR                                     | CRM  |
|------------|--|--|
| Domain     | 3.2.3. Manifestation                             | E55 Type (has type: "Manifestation")                               |
| Link       | has attribute: 4.4.10. Extent of the Carrier     | P137.F is exemplified by (exemplifies) E84 Information Carrier     |
|            |  | E84 Information Carrier P57.F has number of parts E60 Number       |
| Range      | 4.4.10. Extent of the Carrier                    | E60 Number   |
| Conditions |  |  |
|            |  |  |
|            | Source: FRBR                                     | CRM  |
| Domain     | 3.2.3. Manifestation                             | E55 Type (has type: "Manifestation")                               |
| Link       | has attribute: 4.4.11. Physical Medium           | P137.F is exemplified by (exemplifies) E84 Information Carrier     |
|            |  | E84 Information Carrier P45.F consists of (is incorporated in) E57 |
|            |  | Material   |
| Range      | 4.4.11. Physical Medium                          | E57 Material   |
| Conditions |  |  |
|            |  |  |
|            | Source: FRBR                                     | CRM  |
| Domain     | 3.2.3. Manifestation                             | E55 Type (has type: Manifestation)                                 |
| Link       | has attribute: 4.4.12. Capture Mode              | P137.F is exemplified by (exemplifies) E84 Information Carrier     |
|            |  | E84 Information Carrier P108.B was produced by (has produced) E12  |
|            |  | Production Event   |
|            |  | E12 Production Event P32.F used general technique (was technique   |
|            |  | of) E55 Type   |
| Range      | 4.4.12. Capture Mode                             | E55 Type (has type: Capture Mode)                                  |
| Conditions |  | with definition of a subset "Capture Mode" within E55 Type         |
|            |  | with a limited range of possible values for E55 Type in that case: |
|            |  | "analogue", "acoustic", "electric", "digital", "optical"           |
|            |  |  |
|            | Source: FRBR                                     | CRM  |
| Domain     | 3.2.3. Manifestation                             | E55 Type (has type: Manifestation)                                 |
| Link       | has attribute: 4.4.13. Dimensions of the Carrier | P137.F is exemplified by (exemplifies) E84 Information Carrier     |
|            |  | E84 Information Carrier P43.F has dimension (is dimension of) E54  |
|            |  | Dimension  |
| Range      | 4.4.13. Dimensions of the Carrier                | E54 Dimension  |
| Conditions |  |  |

|            | Source: FRBR  | CRM  |
|------------|---|--|
| Domain     | 3.2.3. Manifestation  | E73 Information object (has type: "Manifestation")   |
| Link       | has attribute: 4.4.14. Manifestation Identifier   | P1.F is identified by (identifies) E75 Conceptual Object Appellation   |
| Range      | 4.4.14. Manifestation Identifier  | E75 Conceptual Object Appellation  |
| Conditions |   | Besides, E75 Conceptual Object Appellation P2.F has type (is type of) E55 Type, with a limited range of possible values for E55 Type in that case: "ISBN", "legal deposit number", "government publication number", "music publisher's number", "clearinghouse inventory number" |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.3. Manifestation  | E73 Information Object (has type: "Manifestation")   |
| Link       | has attribute: 4.4.15. Source for Acquisition/Access Authorization  | P105.F right held by (has right on) E39 Actor P105.1.F has type (is type of) E55 Type "Source for Acquisition/ Access Authorization" E39 Actor P131.F is identified by (identifies) E82 Actor Appellation  |
| Range      | 4.4.15. Source for Acquisition/Access Authorization   | E82 Actor Appellation  |
| Conditions | 4.4.15. Source for Acquisition/Access Authorization is defined in FRBR as including a name "and also normally an address". Each data element maps to CRM in a different way. Name:    |  |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.3. Manifestation  | E73 Information Object (has type: "Manifestation")   |
| Link       | has attribute: 4.4.15. Source for Acquisition/Access Authorization  | P105.F right held by (has right on) E39 Actor P105.1.F has type (is type of) E55 Type "Source for Acquisition/ Access Authorization" E39 Actor P76.F has contact point (provides access to) E51 Contact Point  |
| Range      | 4.4.15. Source for Acquisition/ Access Authorization  | E51 Contact Point  |
| Conditions | 4.4.15. Source for Acquisition/Access Authorization is defined in FRBR as including a name "and also normally an address". Each data element maps to CRM in a different way. Address: |  |

|   | CRM  |
|---|--|
| 3.2.3. Manifestation  | E73 Information Object (has type: "Manifestation")   |
| has attribute: 4.4.16. Terms of Availability                    | P104.F is subject to (applies to) E30 Right  |
| ·   | E30 Right P2.F has type (is type of) E55 Type "Terms of Availability"  |
| 4.4.16. Terms of Availability                                   | E30 Right  |
|   |  |
|   |  |
|   | CRM  |
|   | E73 Information Object (has type: "Manifestation")   |
| has attribute: 4.4.17. Access Restrictions on the Manifestation | P104.F is subject to (applies to) E30 Right  |
|   | E30 Right P2.F has type (is type of) E55 Type "Access Restrictions on  |
|   | the Manifestation"   |
| 4.4.17. Access Restrictions on the Manifestation                | E30 Right  |
|   |  |
| c TDDD  | CD1 (  |
|   | CRM  |
|   | E55 Type (has type: "Manifestation") (has type: "Printed Book")  |
| has attribute: 4.4.18. Typetace (Printed Book)                  | P137.F is exemplified by (exemplifies) E84 Information Carrier   |
|   | E84 Information Carrier P3.F has note E62 String   |
| 4.4.10 Tamping (Drinted Paul.)                                  | P3.1.F has type: E55 Type "Typeface"   |
| 4.4.18. Typerace (Printed book)                                 | E62 String   |
|   |  |
| Source: EDRD  | CRM  |
|   | E55 Type (has type: "Manifestation") (has type: "Printed Book")  |
|   | P137.F is exemplified by (exemplifies) E84 Information Carrier   |
| nas attribute. 4.4.19. Type Size (Ffilted book)                 | E84 Information Carrier P3.F has note E62 String   |
|   | P3.1.F has type: E55 Type "Type Size"  |
| 4 4 19 Type Size (Printed Book)                                 | E62 String   |
| 11.17. Type Size (Finded Book)                                  | 102 offits   |
|   |  |
| Source: FRBR  | CRM  |
| 3.2.3. Manifestation  | E55 Type (has type: "Manifestation") (has type: "Hand-Printed  |
|   | Book")   |
| has attribute: 4.4.20. Foliation (Hand-Printed Book)            | P137.F is exemplified by (exemplifies) E84 Information Carrier   |
|   | has attribute: 4.4.16. Terms of Availability  4.4.16. Terms of Availability  Source: FRBR 3.2.3. Manifestation has attribute: 4.4.17. Access Restrictions on the Manifestation  4.4.17. Access Restrictions on the Manifestation  Source: FRBR 3.2.3. Manifestation has attribute: 4.4.18. Typeface (Printed Book)  4.4.18. Typeface (Printed Book)  Source: FRBR 3.2.3. Manifestation has attribute: 4.4.19. Type Size (Printed Book)  4.4.19. Type Size (Printed Book) |

|            |  | E84 Information Carrier P3.F has note E62 String  |
|------------|--|---|
|            |  | P3.1.F has type: E55 Type "Foliation"   |
| Range      | 4.4.20. Foliation (Hand-Printed Book)                  | E62 String  |
| Conditions |  |   |
|            |  |   |
|            | Source: FRBR   | CRM   |
| Domain     | 3.2.3. Manifestation                                   | E55 Type (has type: "Manifestation") (has type: "Hand-Printed Book")  |
| Link       | has attribute: 4.4.21. Collation (Hand-Printed Book)   | P137.F is exemplified by (exemplifies) E84 Information Carrier E84 Information Carrier P3.F has note E62 String P3.1.F has type: E55 Type "Collation" |
| Range      | 4.4.21. Collation (Hand-Printed Book)                  | E62 String  |
| Conditions |  |   |
|            | ·  | ·   |
|            | Source: FRBR   | CRM   |
| Domain     | 3.2.3. Manifestation                                   | E73 Information Object (has type: "Manifestation") (has type: "Serial")   |
| Link       | has attribute: 4.4.22. Publication Status (Serial)     | P2.F has type (is type of) E55 Type "Publication Status"  |
| Range      | 4.4.22. Publication Status (Serial)                    | E55 Type (has type: "Publication Status")   |
| Conditions |  | with only two possible values for E55 Type in that case: "currently published", "has ceased publication"  |
|            | Source: FRBR   | CRM   |
| Domain     | 3.2.3. Manifestation                                   | E55 Type (has type: "Manifestation") (has type: "Serial")   |
| Link       | has attribute: 4.4.23. Numbering (Serial)              | P137.F is exemplified by (exemplifies) E84 Information Carrier  |
|            |  | E84 Information Carrier P65.F shows visual item (is shown by) E34   |
|            |  | Inscription   |
|            |  | (E34 Inscription P2.F has type (is type of) E55 Type "Numbering")   |
| Range      | 4.4.23. Numbering (Serial)                             | E34 Inscription   |
| Conditions |  |   |
|            |  |   |
|            | Source: FRBR   | CRM   |
| Domain     | 3.2.3. Manifestation                                   | E55 Type (has type: "Manifestation") (has type: "Sound Recording")  |
| Link       | has attribute: 4.4.24. Playing Speed (Sound Recording) | P137.F is exemplified by (exemplifies) E84 Information Carrier E84 Information Carrier P2.F has type (is type of) E55 Type "Playing"                  |

|                     |   | Speed"   |
|---------------------|---|--|
| Range               | 4.4.24. Playing Speed (Sound Recording)                     | E55 Type (has type: "Playing Speed")                                   |
| Conditions          | 7 0 1   | with a limited range of possible values for E55 Type in that case: "33 |
|                     |   | 1/3 rpm", "19 cm/s"  |
|                     |   |  |
|                     | Source: FRBR  | CRM  |
| Domain              | 3.2.3. Manifestation  | E55 Type (has type: "Manifestation") (has type: "Sound Recording")     |
| Link                | has attribute: 4.4.25. Groove Width (Sound Recording)       | P137.F is exemplified by (exemplifies) E84 Information Carrier         |
|                     |   | E84 Information Carrier P2.F has type (is type of) E55 Type "Groove    |
|                     |   | Width"   |
| Range               | 4.4.25. Groove Width (Sound Recording)                      | E55 Type (has type: "Groove Width")                                    |
| Conditions          |   | with a limited range of possible values for E55 Type in that case:     |
|                     |   | "microgroove"  |
|                     |   | I am a   |
|                     | Source: FRBR  | CRM  |
| Domain              | 3.2.3. Manifestation  | E55 Type (has type: "Manifestation") (has type: "Sound Recording")     |
| Link                | has attribute: 4.4.26. Kind of Cutting (Sound Recording)    | P137.F is exemplified by (exemplifies) E84 Information Carrier         |
|                     |   | E84 Information Carrier P2.F has type (is type of) E55 Type "Kind of   |
|                     |   | Cutting"   |
| Range               | 4.4.26. Kind of Cutting (Sound Recording)                   | E55 Type (has type: "Kind of Cutting")                                 |
| Conditions          |   | with a limited range of possible values for E55 Type in that case:     |
|                     |   | "lateral", "vertical"  |
|                     | Source: FRBR  | CRM  |
| Domain              | 3.2.3. Manifestation  |  |
|                     |   | E55 Type (has type: "Manifestation") (has type: "Sound Recording")     |
| Link                | has attribute: 4.4.27. Tape Configuration (Sound Recording) | P137.F is exemplified by (exemplifies) E84 Information Carrier         |
|                     |   | E84 Information Carrier P2.F has type (is type of) E55 Type "Tape      |
| Danas               | 4.4.27 Tana Configuration (County Decoupling)               | Configuration"   |
| Range<br>Conditions | 4.4.27. Tape Configuration (Sound Recording)                | E55 Type (has type: "Tape Configuration")                              |
| Conditions          |   | with a limited range of possible values for E55 Type in that case:     |
|                     |   | "eight track", "twelve track"  |
|                     | Source: FRBR  | CRM  |
| Domain              | 3.2.3. Manifestation  | E55 Type (has type: "Manifestation") (has type: "Sound Recording")     |
| Link                | has attribute: 4.4.28. Kind of Sound (Sound Recording)      | P137.F is exemplified by (exemplifies) E84 Information Carrier         |
| LIIII               | The attribute. 1.1.20. Initia of Journa (Journa Recording)  | 110.11 to exchipined by (exchipines) Lot information current           |

|            | ,   |   |
|------------|---|---|
|            |   | E84 Information Carrier P2.F has type (is type of) E55 Type "Kind of Sound"                                   |
| Range      | 4.4.28. Kind of Sound (Sound Recording)                           | E55 Type (has type: "Kind of Sound")  |
| Conditions |   | with a limited range of possible values for E55 Type in that case: "monaural", "stereophonic", "quadraphonic" |
|            |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.3. Manifestation  | E55 Type (has type: "Manifestation") (has type: "Sound Recording")  |
| Link       | has attribute: 4.4.29. Special Reproduction Characteristic (Sound | P137.F is exemplified by (exemplifies) E84 Information Carrier  |
|            | Recording)  | E84 Information Carrier P2.F has type (is type of) E55 Type "Special  |
|            |   | Reproduction Characteristic"  |
| Range      | 4.4.29. Special Reproduction Characteristic (Sound Recording)     | E55 Type (has type: "Special Reproduction Characteristic")  |
| Conditions |   | with a limited range of possible values for E55 Type in that case:  |
|            |   | "NAB", "DBX", "Dolby"   |
|            |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.3. Manifestation  | E55 Type (has type: "Manifestation") (has type: "Image" <sup>4</sup> )  |
| Link       | has attribute: 4.4.30. Colour (Image)                             | P137.F is exemplified by (exemplifies) E84 Information Carrier  |
|            |   | E84 Information Carrier P2.F has type (is type of) E55 Type "Colour"  |
| Range      | 4.4.30. Colour (Image)  | E55 Type (has type: "Colour")   |
| Conditions |   | with a limited range of possible values for E55 Type in that case:  |
|            |   | "black and white"   |
|            |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.3. Manifestation  | E55 Type (has type: "Manifestation") (has type: "Microform")  |
| Link       | has attribute: 4.4.31. Reduction Ratio (Microform)                | P137.F is exemplified by (exemplifies) E84 Information Carrier  |
|            |   | E84 Information Carrier P2.F has type (is type of) E55 Type   |
|            |   | "Reduction Ratio"   |
| Range      | 4.4.31. Reduction Ratio (Microform)                               | E55 Type (has type: "Reduction Ratio")  |
| Conditions |   | with a limited range of possible values for E55 Type in that case:  |
|            |   | "42x", "very high reduction"  |

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<sup>&</sup>lt;sup>4</sup> This is not the same notion as E38 Image. "Image" is to be understood here as the (general) type of a (specific) type of information carriers. It refers to the "image-ness" of a set of physical supports all of which show the same conceptual E38 Image. Not easy to explain...

|            | Source: FRBR  | CRM  |
|------------|---|--|
| Domain     | 3.2.3. Manifestation  | E55 Type (has type: "Manifestation") (has type: "Microform", or has  |
|            |   | type: "Visual Projection")   |
| Link       | has attribute: 4.4.32. Polarity (Microform or Visual Projection)  | P137.F is exemplified by (exemplifies) E84 Information Carrier       |
|            |   | E84 Information Carrier P2.F has type (is type of) E55 Type          |
|            |   | "Polarity"   |
| Range      | 4.4.32. Polarity (Microform or Visual Projection)   | E55 Type (has type: "Polarity")                                      |
| Conditions |   | with a limited range of possible values for E55 Type in that case:   |
|            |   | "positive", "negative", "mixed"                                      |
|            |   | Lance  |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.3. Manifestation  | E55 Type (has type: "Manifestation") (has type: "Microform", or has  |
|            |   | type: "Visual Projection")   |
| Link       | has attribute: 4.4.33. Generation (Microform or Visual Projection)  | P137.F is exemplified by (exemplifies) E84 Information Carrier       |
|            |   | E84 Information Carrier P2.F has type (is type of) E55 Type          |
| D          | 14.00 C (A.C. | "Generation"   |
| Range      | 4.4.33. Generation (Microform or Visual Projection)   | E55 Type (has type: "Generation")                                    |
| Conditions |   | with a limited range of possible values for E55 Type in that case:   |
|            |   | "first generation camera master", "second generation printing        |
|            |   | master", "third generation service copy"                             |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.3. Manifestation  | E55 Type (has type: "Manifestation") (has type: "Visual Projection") |
| Link       | has attribute: 4.4.34. Presentation format (Visual Projection)  | P137.F is exemplified by (exemplifies) E84 Information Carrier       |
|            | (,  | E84 Information Carrier P2.F has type (is type of) E55 Type          |
|            |   | "Presentation format"  |
| Range      | 4.4.34. Presentation format (Visual Projection)   | E55 Type (has type: "Presentation format")                           |
| Conditions |   | with a limited range of possible values for E55 Type in that case:   |
|            |   | "wide screen", "Beta", "VHS"   |
|            |   |  |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.3. Manifestation  | E55 Type (has type: "Manifestation") (has type: "Electronic          |
|            |   | Resource")   |
| Link       | has attribute: 4.4.35. System Requirements (Electronic Resource)  | P137.F is exemplified by (exemplifies) E84 Information Carrier       |
|            |   | E84 Information Carrier P3.F has note E62 String                     |

|            |   | P3.1.F has type: E55 Type "System Requirements"  |
|------------|---|--|
| Range      | 4.4.35. System Requirements (Electronic Resource)                         | E62 String   |
| Conditions |   |  |
|            |   |  |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.3. Manifestation  | E55 Type (has type: "Manifestation") (has type: "Electronic Resource")   |
| Link       | has attribute: 4.4.36. File Characteristics (Electronic Resource)         | P137.F is exemplified by (exemplifies) E84 Information Carrier E84 Information Carrier P3.F has note E62 String P3.1.F has type: E55 Type "File Characteristics" |
| Range      | 4.4.36. File Characteristics (Electronic Resource)                        | E62 String   |
| Conditions |   |  |
|            |   |  |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.3. Manifestation  | E73 Information Object (has type: "Manifestation") (has type: "Remote Access Electronic Resource")   |
| Link       | has attribute: 4.4.37. Mode of Access (Remote Access Electronic           | P3.F has note E62 String   |
|            | Resource)   | P3.1.F has type: E55 Type "Mode of Access"   |
| Range      | 4.4.37. Mode of Access (Remote Access Electronic Resource)                | E62 String   |
| Conditions |   |  |
|            |   |  |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.3. Manifestation  | E73 Information Object (has type: "Manifestation") (has type: "Remote Access Electronic Resource")   |
| Link       | has attribute: 4.4.38. Access Address (Remote Access Electronic Resource) |  |
| Range      | 4.4.38. Access Address (Remote Access Electronic Resource)                | E75 Conceptual Object Appellation  |
| Conditions |   |  |
|            |   |  |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.4. Item   | E84 Information Carrier  |
| Link       | has attribute: 4.5.1. Item identifier                                     | P47.F is identified by (identifies) E42 Object identifier  |
| Range      | 4.5.1. Item identifier  | E42 Object identifier  |
| Conditions |   | Besides, E42 Object Identifier P2.F has type (is type of) E55 Type, with a limited range of possible values for E55 Type in that case:                           |

|                     |  | "call number", "accession number", "bar code"                       |
|---------------------|--|---|
|                     |  |   |
|                     | Source: FRBR   | CRM   |
| Domain              | 3.2.4. Item  | E84 Information Carrier   |
| Link                | has attribute: 4.5.2. Fingerprint  | P47.F is identified by (identifies) E42 Object identifier           |
| Range               | 4.5.2. Fingerprint   | E42 Object identifier   |
| Conditions          |  | Besides, E42 Object Identifier P2.F has type (is type of) E55 Type: |
|                     |  | "Fingerprint"   |
|                     | Source: FRBR   | CRM   |
| D :                 |  |   |
| Domain              | 3.2.4. Item  | E84 Information Carrier   |
| Link                | has attribute: 4.5.3. Provenance of the Item   | P51.F has former or current owner (is former or current owner of)   |
| -                   | 4500   | E39 Actor   |
| Range               | 4.5.3. Provenance of the Item  | E39 Actor   |
| Conditions          |  |   |
|                     | Source: FRBR   | CRM   |
| Domain              | 3.2.4. Item  | E84 Information Carrier   |
| Link                | has attribute: 4.5.4. Marks/Inscriptions   | P65.F shows visual item (is shown by) E37 Mark                      |
|                     | 4.5.4. Marks/Inscriptions  | E37 Mark  |
| Range<br>Conditions | 4.5.4. Warks/ inscriptions   | EST IVIAIR  |
| Conditions          |  |   |
|                     | Source: FRBR   | CRM   |
| Domain              | 3.2.4. Item  | E84 Information Carrier   |
| Link                | has attribute: 4.5.5. Exhibition history   | P25.B moved by (moved) E9 Move                                      |
|                     | , and the second | E9 Move P3.F has note E62 String                                    |
|                     |  | P3.1.F has type: E55 Type "Exhibition History"                      |
| Range               | 4.5.5. Exhibition history  | E62 String  |
| Conditions          |  |   |
|                     |  |   |
| _                   | Source: FRBR   | CRM   |
| Domain              | 3.2.4. Item  | E84 Information Carrier   |
| Link                | has attribute: 4.5.6. Condition of the Item  | P44.F has condition (is condition of) E3 Condition state            |
| Range               | 4.5.6. Condition of the Item   | E3 Condition state  |
| Conditions          |  |   |

|            | Source: FRBR  | CRM  |
|------------|---|--|
| Domain     | 3.2.4. Item   | E84 Information Carrier  |
| Link       | has attribute: 4.5.7. Treatment History               | P31.B was modified by (has modified) E11 Modification Event<br>E11 Modification Event P3.F has note: E62 String<br>P3.1.F has type: E55 Type "Treatment History"   |
| Range      | 4.5.7. Treatment History                              | E62 String   |
| Conditions |   |  |
|            |   |  |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.4. Item   | E84 Information Carrier  |
| Link       | has attribute: 4.5.8. Scheduled treatment             | P31.B was modified by (has modified) E11 Modification Event<br>E11 Modification Event P3.F has note: E62 String<br>P3.1.F has type: E55 Type "Scheduled treatment"   |
| Range      | 4.5.8. Scheduled treatment                            | E62 String   |
| Conditions |   | <i>Note:</i> though the property is expressed in past tense, the modification has not occurred yet: the information refers to future, planned treatment.   |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.4. Item   | E84 Information Carrier  |
| Link       | has attribute: 4.5.9. Access Restrictions on the Item | P104.F is subject to (applies to) E30 Right (E30 Right P2.F has type (is type of): E55 "Access Restrictions")  |
| Range      | 4.5.9. Access Restrictions on the Item                | E30 Right  |
| Conditions |   |  |
|            |   |  |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.5. Person   | E21 Person   |
| Link       | has attribute: 4.6.1. Name of Person                  | P131.F is identified by (identifies) E82 Actor Appellation<br>E82 Actor Appellation P3.F has note: E62 String<br>P3.1.F has type: E55 Type "Name"  |
| Range      | 4.6.1. Name of Person                                 | E62 String   |
| Conditions |   | <i>Note:</i> there is a logical flaw here in FRBR. FRBR only deals with <i>bibliographic</i> records, which do not give any information about <i>persons</i> as such, but only <i>identify</i> them through a "heading". A |

|                  |                                       | heading for a person is a construction consisting of the person's name, dates, title and other designation. There is a constant confusion in FRBR between things and their appellations/identifiers. The attributes for 3.2.5 Person in FRBR do <i>not</i> refer to the real person,   |
|------------------|---------------------------------------|--|
|                  |                                       | but only to the person's "preferred identifier" in a bibliographic record. Data pertaining to the real person will be dealt with in FRANAR, which is not yet available. FRBR should have only one  |
|                  |                                       | attribute for 3.2.5 Person: "Heading". This is the reason why I map "Dates of Person", "Title of Person", and "Other Designation Associated with the Person" to CRM E41 Appellation and not to other CRM entities that might seem more relevant.   |
|                  |                                       | Alternative note: "name", "dates", "title of the person" and "other designation associated with the person" actually are parts of the person's appellation in the context of a bibliographic record; all these attributes should therefore preferably be modeled as parts of E82 Actor Appellation, but this is not possible as E82 Actor Appellation is neither a subclass of E4 Period nor of E73 Information Object nor |
|                  |                                       | of E18 Physical Stuff, that are the only classes (together with their subclasses, of course) that have a property that allows for a whole/part relationship. An extension to CRM would be required in that respect.  |
|                  | Source: FRBR                          | CRM  |
| Domain           | 3.2.5. Person                         | E21 Person   |
| Link             | has attribute: 4.6.2. Dates of Person | P131.F is identified by (identifies) E82 Actor Appellation<br>E82 Actor Appellation P3.F has note: E62 String<br>P3.1.F has type: E55 Type "Dates"   |
| Range            | 4.6.2. Dates of Person                | E62 String   |
| Conditions       |                                       | See above, "Name of Person"  |
|                  |                                       |  |
| [ <del>D</del> · | Source: FRBR                          | CRM  |
| Domain           | 3.2.5. Person                         | E21 Person   |
| Link             | has attribute: 4.6.3. Title of Person | P131.F is identified by (identifies) E82 Actor Appellation<br>E82 Actor Appellation P3.F has note: E62 String<br>P3.1.F has type: E55 Type "Title"   |

| Range               | 4.6.3. Title of Person   | E62 String  |
|---------------------|--|---|
| Conditions          |  | See above, "Name of Person"   |
|                     |  |   |
|                     | Source: FRBR   | CRM   |
| Domain              | 3.2.5. Person  | E21 Person  |
| Link                | has attribute: 4.6.4. Other Designation Associated with the Person | P131.F is identified by (identifies) E82 Actor Appellation  |
|                     |  | E82 Actor Appellation P3.F has note: E62 String   |
|                     |  | P3.1.F has type: E55 Type "Other Designation Associated   |
| Danas               | A (A Other Designation Associated with the Degree                  | with the Person"  |
| Range<br>Conditions | 4.6.4. Other Designation Associated with the Person                | E62 String  See above, "Name of Person"   |
| Conditions          |  | See above. Name of Person   |
|                     | Source: FRBR   | CRM   |
| Domain              | 3.2.6. Corporate Body  | E74 Group   |
| Link                | has attribute: 4.7.1. Name of the Corporate Body                   | P1.F is identified by (identifies) E41 Appellation  |
| Link                | indicate in it. It will be the corporate body                      | E41 Appellation P3.F has note: E62 String   |
|                     |  | P3.1.F has type: E55 Type "Name"  |
| Range               | 4.7.1. Name of the Corporate Body                                  | E62 String  |
| Conditions          | •  | Note: there is a logical flaw here in FRBR. FRBR only deals with  |
|                     |  | bibliographic records, which do not give any information about  |
|                     |  | corporate bodies as such, but only identify them through a "heading".   |
|                     |  | A heading for a corporate body is a construction consisting of the  |
|                     |  | corporate body's name, number, place, date, and other designation.  |
|                     |  | There is a constant confusion in FRBR between things and their  |
|                     |  | appellations/identifiers. The attributes for 3.2.6 Corporate Body in  |
|                     |  | FRBR do <i>not</i> refer to the real corporate body, but only to the corporate body's "preferred identifier" in a bibliographic record. |
|                     |  | Data pertaining to the real corporate body will be dealt with in  |
|                     |  | FRANAR, which is not yet available. FRBR should have only one   |
|                     |  | attribute for 3.2.6 Corporate Body: "Heading". This is the reason why   |
|                     |  | I map "Number Associated with the Corporate Body", "Place   |
|                     |  | Associated with the Corporate Body", "Date Associated with the  |
|                     |  | Corporate Body" and "Other Designation Associated with the  |
|                     |  | Corporate Body" to CRM E41 Appellation and not to other CRM   |
|                     |  | entities that might seem more relevant.   |

|            |   | Alternative note: "number", "place" "date", and "other designation associated with the corporate body" actually are parts of the corporate body's appellation in the context of a bibliographic record; all these attributes should therefore preferably be modeled as parts of E82 Actor Appellation, but this is not possible as E82 Actor Appellation is neither a subclass of E4 Period nor of E73 Information Object nor of E18 Physical Stuff, that are the only classes (together with their subclasses, of course) that have a property that allows for a whole/part relationship. An extension to CRM would be required in that respect. |
|------------|---|---|
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.6. Corporate Body   | E74 Group   |
| Link       | has attribute: 4.7.2. Number Associated with the Corporate Body | P1.F is identified by (identifies) E41 Appellation<br>E41 Appellation P3.F has note: E62 String<br>P3.1.F has type: E55 Type "Number Associated with the<br>Corporate Body"   |
| Range      | 4.7.2. Number Associated with the Corporate Body                | E62 String  |
| Conditions |   | See above, "Name of the Corporate Body"   |
|            |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.6. Corporate Body   | E74 Group   |
| Link       | has attribute: 4.7.3. Place Associated with the Corporate Body  | P1.F is identified by (identifies) E41 Appellation<br>E41 Appellation P3.F has note: E62 String<br>P3.1.F has type: E55 Type "Place Associated with the<br>Corporate Body"  |
| Range      | 4.7.3. Place Associated with the Corporate Body                 | E62 String  |
| Conditions |   | See above, "Name of the Corporate Body"   |
|            |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.6. Corporate Body   | E74 Group   |
| Link       | has attribute: 4.7.4. Date Associated with the Corporate Body   | P1.F is identified by (identifies) E41 Appellation<br>E41 Appellation P3.F has note: E62 String<br>P3.1.F has type: E55 Type "Date Associated with the<br>Corporate Body"   |

| Range      | 4.7.4. Date Associated with the Corporate Body                        | E62 String  |
|------------|---|---|
| Conditions |   | See above, "Name of the Corporate Body"                 |
|            |   | ,   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.6. Corporate Body   | E74 Group   |
| Link       | has attribute: 4.7.5. Other Designation Associated with the Corporate | P1.F is identified by (identifies) E41 Appellation      |
|            | Body  | E41 Appellation P3.F has note: E62 String               |
|            |   | P3.1.F has type: E55 Type "Other Designation Associated |
|            |   | with the Corporate Body"                                |
| Range      | 4.7.5. Other Designation Associated with the Corporate Body           | E62 String  |
| Conditions |   | See above, "Name of the Corporate Body"                 |
|            |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.7. Concept  | E28 Conceptual Object                                   |
| Link       | has attribute: 4.8.1. Term for the Concept                            | P1.F is identified by (identifies) E41 Appellation      |
| Range      | 4.8.1. Term for the Concept   | E41 Appellation   |
| Conditions |   |   |
|            |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.8. Object   | E19 Physical Object                                     |
| Link       | has attribute: 4.9.1. Term for the Object                             | P1.F is identified by (identifies) E41 Appellation      |
| Range      | 4.9.1. Term for the Object  | E41 Appellation   |
| Conditions |   |   |
|            |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.9. Event  | E4 Period   |
| Link       | has attribute: 4.10.1. Term for the Event                             | P1.F is identified by (identifies) E41 Appellation      |
| Range      | 4.10.1. Term for the Event  | E41 Appellation   |
| Conditions |   |   |
|            |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.10. Place   | E53 Place   |
| Link       | has attribute: 4.11.1. Term for the Place                             | P87.F is identified by (identifies) E48 Place name      |
| Range      | 4.11.1. Term for the Place  | E48 Place name  |
| Conditions |   |   |

|             | Source: FRBR   | CRM   |
|-------------|--|---|
| Domain      | 3.2.1. Work  | E73 Information Object (has type: "Expression")                             |
| Link        | 5.2.1.[1]. is realized through (is a realization of) | P130.B features are also found on (shows features of) E73                   |
|             |  | Information Object (has type: "Expression")                                 |
|             |  | P130.1.F kind of similarity: E55 Type "Different version"                   |
| Range       | 3.2.2. Expression                                    | E73 Information Object (has type: "Expression")                             |
| Conditions  |  | <u>Note:</u> the very nature of the FRBR entity "Work" is actually analyzed |
|             |  | as a relationship in CRM. CRM only recognizes FRBR Expression, not          |
|             |  | FRBRWork.   |
|             |  |   |
| - ·         | Source: FRBR   | CRM   |
| Domain      | 3.2.2. Expression                                    | E73 Information Object (has type: "Expression")                             |
| Link        | 5.2.1.[2]. is embodied in (is the embodiment of)     | P128.B is carried by (is carrier of) E84 Information Carrier                |
|             |  | E84 Information Carrier P2.F has type (is type of) E55 Type                 |
| D           | 22236 16 44  | "Manifestation"   |
| Range       | 3.2.3. Manifestation                                 | E55 Type (has type: "Manifestation")  |
| Conditions  |  |   |
|             | Source: FRBR   | CRM   |
| Domain      | 3.2.3. Manifestation                                 | E55 Type (has type: "Manifestation")  |
| Link        | 5.2.1.[3]. is exemplified by (exemplifies)           | P137.F is exemplified by (exemplifies) E84 Information Carrier              |
| Range       | 3.2.4 Item   | E84 Information Carrier   |
| Conditions  | Mapping of Manifestation as a Type:                  | Est maintain carrier  |
| Contantions | mapping of mannesactor as a Type.                    |   |
|             | Source: FRBR   | CRM   |
| Domain      | 3.2.3. Manifestation                                 | E73 Information Object (has type: "Manifestation")                          |
| Link        | 5.2.1.[3]. is exemplified by (exemplifies)           | P128.B is carried by (is carrier of) E84 Information Carrier                |
| Range       | 3.2.4 Item   | E84 Information Carrier   |
| Conditions  | Mapping of Manifestation as an Information Object:   |   |
|             |  |   |
|             | Source: FRBR   | CRM   |
| Domain      | 3.2.1. Work  | E73 Information Object (has type: "Work")                                   |
| Link        | 5.2.2.[1]. is created by (creates)                   | P94.B was created by (has created) E65 Creation Event                       |
|             |  | E65 Creation Event P14.F carried out by (performed) E39 Actor               |

|            |   | P14.1.F in the role of E55 Type   |
|------------|---|---|
| Range      | 3.1.2. Group 2 (3.2.5 Person or 3.2.6. Corporate Body)  | E39 Actor   |
| Conditions |   |   |
|            |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.2. Expression                                       | E73 Information Object (has type: "Expression")   |
| Link       | 5.2.2.[2]. is realized by (realizes)                    | P94.B was created by (has created) E65 Creation Event   |
|            |   | E65 Creation Event P14.F carried out by (performed) E39 Actor P14.1.F in the role of E55 Type |
| Range      | 3.1.2. Group 2 (3.2.5 Person or 3.2.6. Corporate Body)  | E39 Actor   |
| Conditions | *                 |   |
|            |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.3. Manifestation                                    | E55 Type (has type: "Manifestation")  |
| Link       | 5.2.2.[3]. is produced by (produces)                    | P137.F is exemplified by (exemplifies) E84 Information Carrier                                |
|            |   | E84 Information Carrier P108.B was produced by (has produced) E12                             |
|            |   | Production Event  |
|            |   | E12 Production Event P14.F carried out by (performed) E39 Actor                               |
|            |   | P14.1.F in the role of E55 Type   |
| Range      | 3.1.2. Group 2 (3.2.5 Person or 3.2.6. Corporate Body)  | E39 Actor   |
| Conditions |   | Alternative mapping:  |
|            |   | E73 Information Object (has type: "Manifestation")  |
|            |   | P94.B was created by (has created) E65 Creation Event   |
|            |   | E65 Creation Event P14.F carried out by (performed) E39 Actor                                 |
|            |   | P14.1.F in the role of E55 Type   |
|            | C. EDDD   | cm (  |
| Б .        | Source: FRBR  | CRM   |
| Domain     | 3.2.4. Item   | E84 Information Carrier   |
| Link       | 5.2.2.[4]. is owned by (owns)                           | P51.F has former or current owner (is former or current owner of) E39 Actor                   |
| Range      | 3.1.2. Group 2 (3.2.5 Person or 3.2.6. Corporate Body)  | E39 Actor   |
| Conditions | 0.1.2. Group 2 (0.2.5 1 Group of 5.2.5. Corporate Body) | LOVICOI   |
| Conditions | I   | I   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.1. Work   | E73 Information Object (has type: "Work")   |

| Link       | 5.2.3. has as subject (is subject of)                            | P129.F is about (is subject of)                           |
|------------|--|---|
| Range      | 3.1.3. Group 3 (Group 1, Group 2, Concept, Object, Event, Place) | E1 CRM Entity   |
| Conditions |  |   |
|            |  |   |
|            | Source: FRBR   | CRM   |
| Domain     | 3.2.1. Work  | E73 Information Object (has type: "Work")                 |
| Link       | 5.3.1.[a] has a successor (is a successor to)                    | P130.B features are also found on (shows features of) E73 |
|            |  | Information Object  |
|            |  | P130.1.F kind of similarity: E55 Type "Successor"         |
| Range      | 3.2.1. Work  | E73 Information Object (has type: "Work")                 |
| Conditions |  |   |
|            |  | ,   |
|            | Source: FRBR   | CRM   |
| Domain     | 3.2.1. Work  | E73 Information Object (has type: "Work")                 |
| Link       | 5.3.1.[b] has a supplement (supplements)                         | P130.B features are also found on (shows features of) E73 |
|            |  | Information Object  |
|            |  | P130.1.F kind of similarity: E55 Type "Supplement"        |
| Range      | 3.2.1. Work  | E73 Information Object (has type: "Work")                 |
| Conditions |  |   |
|            |  |   |
|            | Source: FRBR   | CRM   |
| Domain     | 3.2.1. Work  | E73 Information Object (has type: "Work")                 |
| Link       | 5.3.1.[c] has a complement (complements)                         | P130.B features are also found on (shows features of) E73 |
|            |  | Information Object  |
|            |  | P130.1.F kind of similarity: E55 Type "Complement"        |
| Range      | 3.2.1. Work  | E73 Information Object (has type: "Work")                 |
| Conditions |  |   |
|            |  |   |
| -          | Source: FRBR   | CRM   |
| Domain     | 3.2.1. Work  | E73 Information Object (has type: "Work")                 |
| Link       | 5.3.1.[d] has a summary (is a summary of)                        | P130.B features are also found on (shows features of) E73 |
|            |  | Information Object  |
|            |  | P130.1.F kind of similarity: E55 Type "Summary"           |
| Range      | 3.2.1. Work  | E73 Information Object (has type: "Work")                 |
| Conditions |  |   |

|            | Source: FRBR  | CRM   |
|------------|---|---|
| Domain     | 3.2.1. Work   | E73 Information Object (has type: "Work")   |
| Link       | 5.3.1.[e] has an adaptation (is an adaptation of)       | P130.B features are also found on (shows features of) E73 Information Object P130.1.F kind of similarity: E55 Type "Adaptation"   |
| Range      | 3.2.1. Work   | E73 Information Object (has type: "Work")   |
| Conditions |   |   |
|            |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.1. Work   | E73 Information Object (has type: "Work")   |
| Link       | 5.3.1.[f] has a transformation (is a transformation of) | P130.B features are also found on (shows features of) E73 Information Object P130.1.F kind of similarity: E55 Type "Transformation"   |
| Range      | 3.2.1. Work   | E73 Information Object (has type: "Work")   |
| Conditions |   | Note: "Transformation" does not have the same meaning in FRBR and CRM. In CRM, "Transformation" is a subclass of both E64 End of Existence and E63 Beginning of Existence: a unique object "dies" and reappears as something else, another unique object. In FRBR, a Work can be "transformed" into something else, and remain available in its original form. It would therefore be inaccurate to map the FRBR relationship "has a transformation (is a transformation of)" to the CRM sequence E77 Persistent Item P124 was transformed by E81 Transformation P123.F resulted in E77 Persistent Item. |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.1. Work   | E73 Information Object (has type: "Work")   |
| Link       | 5.3.1.[g] has an imitation (is an imitation of)         | P130.B features are also found on (shows features of) E73<br>Information Object<br>P130.1.F kind of similarity: E55 Type "Imitation"  |
| Range      | 3.2.1. Work   | E73 Information Object (has type: "Work")   |
| Conditions |   |   |
|            |   |   |
| T          | Source: FRBR  | CRM   |
| Domain     | 3.2.1. Work   | E73 Information Object (has type: "Work")   |

| Link       | 5.3.1.1.F has part (is part of)                     | P106.F is composed of (forms part of) E73 Information Object    |
|------------|---|---|
| Range      | 3.2.1. Work   | E73 Information Object (has type: "Work")                       |
| Conditions |   |   |
|            |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.2. Expression                                   | E73 Information Object (has type: "Expression")                 |
| Link       | 5.3.2.[a] has an abridgement (is an abridgement of) | P130.B features are also found on (shows features of) E73       |
|            |   | Information Object  |
|            |   | P130.1.F kind of similarity: E55 Type "Abridgement"             |
| Range      | 3.2.2. Expression                                   | E73 Information Object (has type: "Expression")                 |
| Conditions |   |   |
|            |   |   |
|            | Source: FRBR  | CRM   |
| Domain     | 3.2.2. Expression                                   | E73 Information Object (has type: "Expression")                 |
| Link       | 5.3.2.[b] has a revision (is a revision of)         | P130.B features are also found on (shows features of) E73       |
|            |   | Information Object  |
|            |   | P130.1.F kind of similarity: E55 Type "Revision"                |
| Range      | 3.2.2. Expression                                   | E73 Information Object (has type: "Expression")                 |
| Conditions |   |   |
|            | C EDDD  | CDV (   |
| - ·        | Source: FRBR  | CRM   |
| Domain     | 3.2.2. Expression                                   | E33 Linguistic object   |
| Link       | 5.3.2.[c] has a translation (is a translation of)   | P73.F has translation (is translation of) E33 Linguistic object |
| Range      | 3.2.2. Expression                                   | E33 Linguistic object   |
| Conditions |   |   |
|            | C EDDD  | CDV (   |
| Б.         | Source: FRBR  | CRM   |
| Domain     | 3.2.2. Expression                                   | E73 Information Object (has type: "Expression")                 |
| Link       | 5.3.2.[d] has an arrangement (is an arrangement of) | P130.B features are also found on (shows features of) E73       |
|            |   | Information Object  |
| D          | 2.2.2 Francisco                                     | P130.1.F kind of similarity: E55 Type "Arrangement"             |
| Range      | 3.2.2. Expression                                   | E73 Information Object (has type: "Expression")                 |
| Conditions |   |   |
|            | C FRRR  | CDM   |
|            | Source: FRBR  | CRM   |

| Domain     | 3.2.2. Expression                                 | E73 Information Object (has type: "Expression")                              |
|------------|---|--|
| Link       | 5.3.2.[e] has a successor (is a successor to)     | P130.B features are also found on (shows features of) E73                    |
|            |   | Information Object   |
|            |   | P130.1.F kind of similarity: E55 Type "Successor"                            |
| Range      | 3.2.2. Expression                                 | E73 Information Object (has type: "Expression")                              |
| Conditions |   |  |
|            |   |  |
|            | Source: FRBR                                      | CRM  |
| Domain     | 3.2.2. Expression                                 | E73 Information Object (has type: "Expression")                              |
| Link       | 5.3.2.[f] has a supplement (supplements)          | P130.B features are also found on (shows features of) E73                    |
|            |   | Information Object   |
|            |   | P130.1.F kind of similarity: E55 Type "Supplement"                           |
| Range      | 3.2.2. Expression                                 | E73 Information Object (has type: "Expression")                              |
| Conditions |   |  |
|            |   |  |
|            | Source: FRBR                                      | CRM  |
| Domain     | 3.2.2. Expression                                 | E73 Information Object (has type: "Expression")                              |
| Link       | 5.3.2.[g] has a complement (complements)          | P130.B features are also found on (shows features of) E73                    |
|            |   | Information Object   |
|            |   | P130.1.F kind of similarity: E55 Type "Complement"                           |
| Range      | 3.2.2. Expression                                 | E73 Information Object (has type: "Expression")                              |
| Conditions |   |  |
|            | c rppp  | l on t   |
|            | Source: FRBR                                      | CRM  |
| Domain     | 3.2.2. Expression                                 | E73 Information Object (has type: "Expression")                              |
| Link       | 5.3.2.[h] has a summary (is a summary of)         | P130.B features are also found on (shows features of) E73                    |
|            |   | Information Object   |
|            |   | P130.1.F kind of similarity: E55 Type "Summary"                              |
| Range      | 3.2.2. Expression                                 | E73 Information Object (has type: "Expression")                              |
| Conditions |   |  |
|            | Source: FRBR                                      | CRM  |
| Domoir     |   |  |
| Domain     | 3.2.2. Expression                                 | E73 Information Object (has type: "Expression")                              |
| Link       | 5.3.2.[i] has an adaptation (is an adaptation of) | P130.B features are also found on (shows features of) E73 Information Object |

|             |   | P130.1.F kind of similarity: E55 Type "Adaptation"                       |
|-------------|---|--|
| Range       | 3.2.2. Expression                                       | E73 Information Object (has type: "Expression")                          |
| Conditions  | •   |  |
|             | •   |  |
|             | Source: FRBR  | CRM  |
| Domain      | 3.2.2. Expression                                       | E73 Information Object (has type: "Expression")                          |
| Link        | 5.3.2.[j] has a transformation (is a transformation of) | P130.B features are also found on (shows features of) E73                |
|             |   | Information Object   |
|             |   | P130.1.F kind of similarity: E55 Type "Transformation"                   |
| Range       | 3.2.2. Expression                                       | E73 Information Object (has type: "Expression")                          |
| Conditions  |   | Note: "Transformation" does not have the same meaning in FRBR            |
|             |   | and CRM. In CRM, "Transformation" is a subclass of both E64 End          |
|             |   | of Existence and E63 Beginning of Existence: a unique object "dies"      |
|             |   | and reappears as something else, another unique object. In FRBR, an      |
|             |   | Expression can be "transformed" into something else, and yet remain      |
|             |   | available in its original form, on distinct carriers. It would therefore |
|             |   | be inaccurate to map the FRBR relationship "has a transformation (is     |
|             |   | a transformation of)" to the CRM sequence E77 Persistent Item P124       |
|             |   | was transformed by E81 Transformation P123.F resulted in E77             |
|             |   | Persistent Item.   |
|             | Source: FRBR  | CRM  |
| Domain      | 3.2.2. Expression                                       | E73 Information Object (has type: "Expression")                          |
| Link        | 5.3.2.[k] has an imitation (is an imitation of)         | P130.B features are also found on (shows features of) E73                |
| LIIK        | 5.5.2.[K] has an initiation (is an initiation or)       | Information Object   |
|             |   | P130.1.F kind of similarity: E55 Type "Imitation"                        |
| Range       | 3.2.2. Expression                                       | E73 Information Object (has type: "Expression")                          |
| Conditions  | O.Z.Z. Expression                                       | 270 Information object (has type. Expression)                            |
| Contantions |   |  |
|             | Source: FRBR  | CRM  |
| Domain      | 3.2.2. Expression                                       | E73 Information Object (has type: "Expression")                          |
| Link        | 5.3.2.1.F has part (is a part of)                       | P106.F is composed of (forms part of) E73 Information object             |
| Range       | 3.2.2. Expression                                       | E73 Information Object (has type: "Expression")                          |
| Conditions  | •   |  |
|             |   | -  |

|            | Source: FRBR                                      | CRM   |
|------------|---|---|
| Domain     | 3.2.2. Expression                                 | E73 Information Object (has type: "Expression")           |
| Link       | 5.3.3.[a] has a successor (is a successor to)     | P130.B features are also found on (shows features of) E73 |
|            |   | Information Object  |
|            |   | P130.1.F kind of similarity: E55 Type "Successor"         |
| Range      | 3.2.1. Work                                       | E73 Information Object (has type: "Work")                 |
| Conditions |   |   |
|            |   |   |
|            | Source: FRBR                                      | CRM   |
| Domain     | 3.2.2. Expression                                 | E73 Information Object (has type: "Expression")           |
| Link       | 5.3.3.[b] has a supplement (supplements)          | P130.B features are also found on (shows features of) E73 |
|            |   | Information Object  |
|            |   | P130.1.F kind of similarity: E55 Type "Supplement"        |
| Range      | 3.2.1. Work                                       | E73 Information Object (has type: "Work")                 |
| Conditions |   |   |
|            |   |   |
|            | Source: FRBR                                      | CRM   |
| Domain     | 3.2.2. Expression                                 | E73 Information Object (has type: "Expression")           |
| Link       | 5.3.3.[c] has a complement (complements)          | P130.B features are also found on (shows features of) E73 |
|            |   | Information Object  |
|            |   | P130.1.F kind of similarity: E55 Type "Complement"        |
| Range      | 3.2.1. Work                                       | E73 Information Object (has type: "Work")                 |
| Conditions |   |   |
|            | C FIRE  | l cm r  |
| ъ .        | Source: FRBR                                      | CRM   |
| Domain     | 3.2.2. Expression                                 | E73 Information Object (has type: "Expression")           |
| Link       | 5.3.3.[d] has a summary (is a summary of)         | P130.B features are also found on (shows features of) E73 |
|            |   | Information Object  |
| D          | 0.04 M/ 1   | P130.1.F kind of similarity: E55 Type "Summary"           |
| Range      | 3.2.1. Work                                       | E73 Information Object (has type: "Work")                 |
| Conditions |   |   |
|            | Causas EDDD                                       | CDM   |
| Damair     | Source: FRBR                                      | CRM   |
| Domain     | 3.2.2. Expression                                 | E73 Information Object (has type: "Expression")           |
| Link       | 5.3.3.[e] has an adaptation (is an adaptation of) | P130.B features are also found on (shows features of) E73 |

|            |   | Information Object   |
|------------|---|--|
|            |   | P130.1.F kind of similarity: E55 Type "Adaptation"   |
| Range      | 3.2.1. Work   | E73 Information Object (has type: "Work")  |
| Conditions |   |  |
|            |   |  |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.2. Expression                                       | E73 Information Object (has type: "Expression")  |
| Link       | 5.3.3.[f] has a transformation (is a transformation of) | P130.B features are also found on (shows features of) E73 Information Object   |
| D          | 224 W. 1  | P130.1.F kind of similarity: E55 Type "Transformation"   |
| Range      | 3.2.1. Work   | E73 Information Object (has type: "Work")  |
| Conditions |   | Note: "Transformation" does not have the same meaning in FRBR and CRM. In CRM, "Transformation" is a subclass of both E64 End of Existence and E63 Beginning of Existence: a unique object "dies" and reappears as something else, another unique object. In FRBR, an Expression can be "transformed" into something else, and yet remain available in its original form, on distinct carriers. It would therefore be inaccurate to map the FRBR relationship "has a transformation (is a transformation of)" to the CRM sequence E77 Persistent Item P124 was transformed by E81 Transformation P123.F resulted in E77 Persistent Item. |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.2. Expression                                       | E73 Information Object (has type: "Expression")  |
| Link       | 5.3.3.[g] has an imitation (is an imitation of)         | P130.B features are also found on (shows features of) E73 Information Object P130.1.F kind of similarity: E55 Type "Imitation"   |
| Range      | 3.2.1. Work   | E73 Information Object (has type: "Work")  |
| Conditions |   |  |
|            |   |  |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.3. Manifestation                                    | E55 Type (has type: "Manifestation")   |
| Link       | 5.3.4.[a] has a reproduction (is a reproduction of)     | P2.B is type of (has type) E84 Information Carrier E84 Information Carrier P108.B was produced by (has produced) E12 Production Event  |

|            |   | E12 Due dustion Execut D12E E word consul abject (was word for EEE             |
|------------|---|--|
|            |   | E12 Production Event P125.F used general object (was used for) E55             |
|            |   | Type (has type: "Manifestation") P125.1.F mode of use: E55 Type "Reproduction" |
| D          | 000016 16 4 41  | <u> </u>   |
| Range      | 3.2.3. Manifestation                                    | E55 Type (has type: "Manifestation")   |
| Conditions |   |  |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.3. Manifestation                                    | E73 Information Object (has type: "Manifestation")                             |
| Link       |   |  |
| Link       | 5.3.4.[b] has an alternate (is an alternate of)         | P130.B features are also found on (shows features of) E73                      |
|            |   | Information Object   |
| D          | 000016 16 4 41  | P130.1.F kind of similarity: E55 Type "Alternate"                              |
| Range      | 3.2.3. Manifestation                                    | E73 Information Object (has type: "Manifestation")                             |
| Conditions |   |  |
|            | Source: FRBR  | CRM  |
| ъ :        |   |  |
| Domain     | 3.2.3. Manifestation                                    | E73 Information Object (has type: "Manifestation")                             |
| Link       | 5.3.4.1.F has part (is part of)                         | P106.F is composed of (forms part of) E73 Information object                   |
| Range      | 3.2.3. Manifestation                                    | E73 Information Object (has type: "Manifestation")                             |
| Conditions |   |  |
|            | Course EDDD   | CDM  |
| ъ .        | Source: FRBR  | CRM  |
| Domain     | 3.2.3. Manifestation                                    | E55 Type (has type: "Manifestation")   |
| Link       | 5.3.5. is a reproduction of (has a reproduction)        | P2.B is type of (has type) E84 Information Carrier                             |
|            |   | E84 Information Carrier P108.B was produced by (has produced) E12              |
|            |   | Production Event   |
|            |   | E12 Production Event P16.F used specific object (was used for) E84             |
|            |   | Information Carrier  |
|            |   | P16.1.F mode of use: E62 String  |
| Range      | 3.2.4. Item   | E84 Information Carrier  |
| Conditions |   | Note: range of subproperty "P16.1.F mode of use" could be E55 Type             |
|            |   | ("Reproduction") instead of E62 String in this particular case                 |
|            | C EDDD  | CDM  |
| ъ :        | Source: FRBR  | CRM  |
| Domain     | 3.2.4. Item   | E84 Information Carrier  |
| Link       | 5.3.6.[a] has reconfiguration (is a reconfiguration of) | P111.B was added by (added) E79 Part Addition                                  |

|            | 5.3.6.[a].[1]. Bound with                               | E79 Part Addition P110.F added to (was augmented by) E84 Information Carrier   |
|------------|---|--|
| Range      | 3.2.4. Item   | E84 Information Carrier  |
| Conditions |   | Or:  |
|            |   | E84 Information Carrier P124.B was transformed by (transformed)  |
|            |   | E81 Transformation   |
|            |   | E81 Transformation P123.F resulted in (was result of) E84  |
|            |   | Information Carrier  |
|            | C PARA  | lon (  |
| ъ .        | Source: FRBR  |  |
| Domain     | 3.2.4. Item   |  |
| Link       | 5.3.6.[a] has reconfiguration (is a reconfiguration of) |  |
|            | 5.3.6.[a].[2]. Split into (extracted from)              | , , , , , , , , , , , , , , , , , , ,  |
|            |   |  |
| Range      | 3.2.4. Item   |  |
| Conditions |   |  |
|            |   |  |
|            |   |  |
|            |   |  |
|            |   | Information Carrier  |
|            | Source: FRBR  | CRM  |
| Domain     | 3.2.4. Item   | E84 Information Carrier  |
| Link       | 5.3.6.[b]. has reproduction (is a reproduction of)      |  |
|            |   | E12 Production Event P16.F used specific object (was used for) E84   |
|            |   | Information Carrier  |
|            |   | E81 Transformation P123.F resulted in (was result of) E Information Carrier  CRM E84 Information Carrier P112.B was diminished by (removed from) E80 Part Removal E80 Part Removal P113.F removed (was removed by) E Information Carrier E84 Information Carrier Or: E84 Information Carrier P124.B was transformed by (transforme E81 Transformation E81 Transformation P123.F resulted in (was result of) E Information Carrier  CRM E84 Information Carrier P108.B was produced by (has produced) E12 Production Event E12 Production Event P16.F used specific object (was used for) E Information Carrier P16.1.F mode of use: E62 String E84 Information Carrier Note: range of subproperty "P16.1.F mode of use" could be E55 Ty ("Reproduction") instead of E62 String in this particular case  CRM E84 Information Carrier P46.F is composed of (forms part of) |
| Range      | 3.2.4. Item   |  |
| Conditions |   | Note: range of subproperty "P16.1.F mode of use" could be E55 Type   |
|            |   | ("Reproduction") instead of E62 String in this particular case   |
|            |   |  |
|            | Source: FRBR  |  |
| Domain     | 3.2.4. Item   |  |
| Link       | 5.3.6.1.F has part (is part of)                         | 1 \ 1 /  |
| Range      | 3.2.4. Item   | E84 Information Carrier  |